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United States Department of the Interior
FISH AND WILDLIFE SERVICE
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EPA REGION VIII
SUPERFUND BRANCH

In Reply Refer To
(CO/KS/NE/UT)

November 17, 2000

Mr. Jim Christiansen
U.S. Environmental Protection Agency
999 18th Street, Suite 500
Denver, Colorado 80202-2466

Re: Draft Sampling and Analysis Plan for Richardson Flat

Dear Mr. Christiansen:

As part of technical support to the Environmental Protection Agency (EPA) for the Richardson Flat site, the Fish and Wildlife Service (Service) is providing comments to the above referenced document.

General Comments

It is important that ecological considerations be brought forward within an ecological assessment as part of the Remedial Investigation/Feasibility Study process, which includes scoping and work plan development. The Service noted that the previously submitted *Statement of Work for the Focused Remedial Investigation/Feasibility Study* (RI/FS) for the Richardson Flat Tailings Site, which included the RI/FS Work Plan, contained a discussion of additional data needs for site characterization. The RI/FS Statement of Work stated that the additional information gathered will assist to better define potential Applicable or Relevant and Appropriate Regulations (ARARs). Additional biological, geological, chemical, and hydrological data collection is also necessary in order to identify potential damages to ecological resources, conduct an ecological risk assessment, and evaluate remediation criteria to protect vulnerable natural resources. These data needs should be addressed as an important objective of the Sampling and Analysis Plan (SAP) in order to characterize effects, sources, and exposure and develop models that are to be used to relate these measures to each other and provide an estimate of risk.

Specific Comments

Page 10, second paragraph: It is stated that the silt and clay layer overlying the upper aquifer presents a significant barrier to vertical migration of water from the tailings site. Has lateral migration been investigated in this aquifer?

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Page 11, Section 2.2.1.3: The report states that there is very little transfer of metals in the sediments to the water. Have leaching tests (e.g., Toxicity Characteristic Leaching Procedure) been conducted on these sediments?

Page 12, last paragraph: Wetland sediments that are rich in organic carbon are said to be binding the metals and therefore not allowing significant mobilization and release of metals to the environment. Similar to the above comment, has leach testing or sediment characterization been completed for these sediments?

Page 16, Section 3.1.1: Surface water sample locations, as shown in Figure 4.0, do not appear to include the pond area located on the west side of the study area. This area likely provides refugia for wetland-dependent birds as well as other aquatic vertebrates. Please clarify the rationale for excluding this location for both surface water and sediment sampling. In addition, is sampling site RT-12 considered a "background" or "reference" sampling point?

Page 17, Section 3.1.2: It is unclear from Figure 4.0 as to where the two monitoring wells are located . Please provide monitoring well number in text and reference this number in Figure 4.0.

Page 18, Section 3.1.3: It is stated that EPA will use collected soil data in the risk assessment process to evaluate the potential for impacts to human health and the environment. The RI/FS Statement of Work provided only a preliminary site model for this site and stated that a conceptual site model will be developed in coordination with a toxicologist from EPA using information presented in the preliminary site model. The Service believes that ecological conceptual models will need to be developed for this site in order to provide a complete ecological assessment of this site. Soil, surface and ground water, and biotic pathways should be included in the conceptual models that are to be developed with the site characterization information collected during the sampling/analysis process.

Page 18, first paragraph: Soil samples are to be collected at the surface to characterize the cover material for potential risk to humans from exposure to contaminated soils. However, the end of this paragraph states that the surface sample data will be used by EPA to determine if the cover material presents a threat to human health or the environment. Action levels provided (*i.e.*, lead at 500 ppm and arsenic at 250 ppm) are screening levels for human health risks. The Service believes that sampling should be collected with the intent to provide appropriate information to evaluate risks to wildlife resources. Northern sage grouse, which use this site as winter cover, should be considered as a potential ecological receptor in an ecological assessment. Effect levels for this species and other wildlife are likely to be significantly lower than human health action levels.

Page 18, first paragraph: It is stated that the thickness of the soil cover will be determined by excavating by various techniques down to the soil/tailings interface. Please clarify the extent of this excavation on the site. Are all 43 locations to be excavated by invasive techniques or by hand? The timing and extent of this sampling may be important relative to disturbance to

migratory and resident bird use. We recommend that disturbance factors be evaluated for this sampling effort.

Page 18, second paragraph: We recommend that you add "Off-site sampling..." to the beginning of this paragraph in order to clarify in the text that these sample locations are off-site, as indicated in Figure 6.0. In addition, it would be helpful to state in this paragraph what type of constituents are to be evaluated in these samples.

Page 19, Section 3.1.4: As stated above, in reference to soil sampling, sediment samples should be collected so that they provide information relevant to exposure pathways, and therefore are useful to the ecological risk assessment process.

Page 19, Section 3.1.5: Spelling correction - "long-term" (first sentence).

Page 19, Section 3.1.5: The Service recommends that the sampling technique (as discussed in Section 3.2.3.2) be summarized here, or at least provide reference to the exact section of the report, rather than referring the reader to general sections of the report.

Page 20, top of page: Please clarify the sentence which states that samples are to be collected either by excavating a test pit with a backhoe or with direct push methods.

Page 20, Section 3.1.5.1: Please clarify the sampling technique to be used in the subsurface sampling or refer the reader to the appropriate methodology section.

Page 20, second paragraph: Please specify the location of sampling points for the subsurface sampling. Are these the locations shown in Figure 5.0?

Page 20, last paragraph: It is stated that monitoring wells will be installed if groundwater is present in the tailings south of the diversion ditch. How will the location and number of wells to be installed in this area be determined?

Page 21, general comment to Section 3.0: The Service recommends that additional sampling and analysis for biota be considered for this site in order to provide more complete information to evaluate potential impacts to ecological receptors. Vegetation (*e.g.*, sage brush) and aquatic/terrestrial insects appear to be an important dietary component for wildlife receptors at this site and should be considered. Colocation, both in space and time, of soil and plant samples will allow ecological assessors to model the relationship between soil and plant concentrations.

Page 23, Section 3.2.3.1: Please clarify whether the soil samples are to be sieved and, if so, what sieve size(s) are to be used.

Page 24, Section 3.2.4: The Service recommends that clarification be provided in this section as to whether sediment samples collected will be discrete and/or composite samples.

Page 24. Section 3.3: Please clarify as to whether evidence tape is to be used to secure samples as part of the sample handling protocols.

We appreciate the opportunity to comment on this report. If you have questions, please contact Betty Grizzle at 801-524-5001, ext. 139.

Sincerely,

Reed E. Harris

Reed E. Harris
Utah Field Supervisor

cc: United Park City Mines, (Attn: Kerry Gee), P.O. Box 1450, Park City, UT 84060

Utah Department of Environmental Quality, (Attn: Steven Thiriot), Division of Environmental Response and Remediation, Box 144810, Salt Lake City, UT 84114-4810

USFWS, Denver, CO (Attn: Denise Klimas)